

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Applicant(s): J. TANAKA, et al

Serial No.: (not yet assigned)

Filed: November 26, 2001

For: COLOR LIQUID CRYSTAL PANEL AND COLOR LIQUID
CRYSTAL DISPLAY APPARATUS

PRELIMINARY AMENDMENT

Commissioner for Patents
Washington, D.C. 20231

November 26, 2001

Sir:

The following amendments and remarks are respectfully
submitted in connection with the above-identified application.

IN THE SPECIFICATION:

Page 1, between the title of the invention and line 1,
insert the following paragraph:

CROSS REFERENCE TO RELATED APPLICATION

This is a continuation of U.S. application Serial No.
09/797,720, filed March 5, 2001, the subject matter of which
is incorporated by reference herein.

IN THE CLAIMS:

Please cancel claims 1, 2, 5, 6, 9 and 11-12 without
prejudice or disclaimer of the subject matter thereof.

Please amend claims 3, 4, 7, 8, 10, 13, 14 and 20 as
follows:

3. (amended) A color liquid crystal display apparatus characterized in that:

said color liquid crystal panel comprises on one substrate of a pair of substrates which sandwich liquid crystal,

thin-film transistor elements arranged in a matrix shape in correspondence with pixels;

a wiring portion of said thin-film transistor elements;

a pixel electrode connected to said wiring portion; and

a color filter layer formed between said pixel electrode and an inorganic insulating layer for covering said wiring portion of said thin-film transistor elements,

said color filter layer includes a lower light-transmission flattened layer and a primary-color-type colored filter pattern, and is provided an opening through which a connection portion of said wiring portion of said thin-film transistor elements and said pixel electrode is penetrated;

a common electrode commonly used for plural pixels is formed on the other substrate;

said pixel electrode is driven by said thin-film transistor elements in response to an image signal; and

said liquid crystal is driven by a voltage applied between said pixel electrode and said common electrode to form an image.

4. (amended) A color liquid crystal display apparatus characterized in that:

said color liquid crystal panel comprises on one substrate of a pair of substrates which sandwich liquid crystal,

thin-film transistor elements arranged in a matrix shape in correspondence with pixels;

a wiring portion of said thin-film transistor elements;

a pixel electrode connected to said wiring portion; and

a color filter layer formed between said pixel electrode and an inorganic insulating layer for covering said wiring portion of said thin-film transistor elements,

said color filter layer includes a lower light-transmission flatted layer, a primary-color-type colored filter pattern and an upper light-transmission protection layer, and is provided with an opening through which a connection portion of said wiring portion and said pixel electrode is penetrated; and

a common electrode commonly used for plural pixels is formed on the other substrate;

said pixel electrode is driven by said thin-film transistor elements in response to an image signal; and

said liquid crystal is driven by a voltage applied between said pixel electrode and said common electrode to form an image.

7. (amended) A color liquid crystal display apparatus as claimed in claim 3 characterized in that:

said lower light-transmission flatted layer and said primary-color-type colored pattern are made of photosensitive resin.

8. (amended) A color liquid crystal display apparatus as claimed in claim 4 characterized in that:

said lower light-transmission flatted layer, said primary-color-type colored pattern and said upper light-transmission protection layer are made of photosensitive resin.

10. (amended) A color liquid crystal display apparatus as claimed in claim 4 characterized in that:

said lower light-transmission flatted layer and said upper light-transmission protection layer are made of thermosetting resin.

13. (amended) A color liquid crystal display apparatus as claimed in claim 3 characterized in that:

said lower light-transmission flatted layer is a polyimide film in which a polyimide precursor whose molecular terminal is end-capped is imidized by heat-curing.

14. (amended) A color liquid crystal display apparatus as claimed in claim 4 characterized in that:

said lower light-transmission flatted layer is a polyimide film in which a polyimide precursor whose molecular terminal is end-capped is imidized by heat-curing.

20. (amended) A color liquid crystal display apparatus as claimed in claim 17 characterized in that:

said lower light-transmission flattened layer is a polyimide film in which a polyimide precursor whose molecular terminal is end-capped is imidized by heat-curing.

REMARKS

By the above amendment, the specification has been amended so as to incorporate the Cross-Reference to Related Application, claims 1, 2, 5, 6, 9, 11 and 12 have been canceled, and claims 3, 4, 7, 8, 10, 14 and 20 have been amended to correct the preamble of such claims.

Also submitted herewith is a proposed amendment to the drawings, wherein Fig. 13 has been amended at this time. Upon receipt of the approval of the amendment to the drawings and receipt of a Notice of Allowance, the proposed drawing corrections will be effected in accordance with present practice.

Examination of the application and favorable action thereof is respectfully requested.

To the extent necessary, applicant's petition for an extension of time under 37 CFR 1.136. Please charge any shortage in the fees due in connection with the filing of this paper, including extension of time fees, to Deposit Account

No. 01-2135 (500.39756CX1) and please credit any excess fees
to such deposit account.

Respectfully submitted,



Melvin Kraus

Registration No. 22,466

ANTONELLI, TERRY, STOUT & KRAUS, LLP

MK/cee

(703) 312-6600

VERSION WITH MARKINGS TO SHOW CHANGES MADE

IN THE SPECIFICATION:

Page 1, between the title of the invention and line 1,
insert the following paragraph:

CROSS REFERENCE TO RELATED APPLICATION

This is a continuation of U.S. application Serial No.
09/797,720, filed March 5, 2001, the subject matter of which
is incorporated by reference herein.

IN THE CLAIMS:

Please cancel claims 1, 2, 5, 6, 9 and 11-12 without
prejudice or disclaimer of the subject matter thereof.

Please amend claims 3, 4, 7, 8, 10, 13, 14 and 20 as
follows:

3. (amended) A color liquid crystal [panel] display
apparatus characterized in that:

said color liquid crystal panel comprises on one
substrate of a pair of substrates which sandwich liquid
crystal,

thin-film transistor elements arranged in a matrix shape
in correspondence with pixels;

a wiring portion of said thin-film transistor elements;

a pixel electrode connected to said wiring portion; and

a color filter layer formed between said pixel electrode
and an inorganic insulating layer for covering said wiring
portion of said thin-film transistor elements,

said color filter layer includes a lower light-transmission flatted layer and a primary-color-type colored filter pattern, and is provided an opening through which a connection portion of said wiring portion of said thin-film transistor elements and said pixel electrode is penetrated;

a common electrode commonly used for plural pixels is formed on the other substrate;

said pixel electrode is driven by said thin-file transistor elements in response to an image signal; and

said liquid crystal is driven by a voltage applied between said pixel electrode and said common electrode to form an image.

4. (amended) A color liquid crystal [panel] display apparatus characterized in that:

said color liquid crystal panel comprises on one substrate of a pair of substrates which sandwich liquid crystal,

thin-film transistor elements arranged in a matrix shape in correspondence with pixels;

a wiring portion of said thin-film transistor elements;

a pixel electrode connected to said wiring portion; and

a color filter layer formed between said pixel electrode and an inorganic insulating layer for covering said wiring portion of said thin-film transistor elements,

said color filter layer includes a lower light-transmission flatted layer, a primary-color-type colored filter pattern and an upper light-transmission protection

layer, and is provided with an opening through which a connection portion of said wiring portion and said pixel electrode is penetrated; and

a common electrode commonly used for plural pixels is formed on the other substrate;

said pixel electrode is driven by said thin-file transistor elements in response to an image signal; and

said liquid crystal is driven by a voltage applied between said pixel electrode and said common electrode to form an image.

7. (amended) A color liquid crystal [panel] display apparatus as claimed in claim 3 characterized in that:

said lower light-transmission flatted layer and said primary-color-type colored pattern are made of photosensitive resin.

8. (amended) A color liquid crystal [panel] display apparatus as claimed in claim 4 characterized in that:

said lower light-transmission flatted layer, said primary-color-type colored pattern and said upper light-transmission protection layer are made of photosensitive resin.

10. (amended) A color liquid crystal [panel] display apparatus as claimed in claim 4 characterized in that:

said lower light-transmission flattened layer and said upper light-transmission protection layer are made of thermosetting resin.

13. (amended) A color liquid crystal [panel] display apparatus as claimed in claim 3 characterized in that:

said lower light-transmission flattened layer is a polyimide film in which a polyimide precursor whose molecular terminal is end-capped is imidized by heat-curing.

14. (amended) A color liquid crystal [panel] display apparatus as claimed in claim 4 characterized in that:

said lower light-transmission flattened layer is a polyimide film in which a polyimide precursor whose molecular terminal is end-capped is imidized by heat-curing.

20. (amended) A color liquid crystal [panel] display apparatus as claimed in claim 17 characterized in that:

said lower light-transmission flattened layer is a polyimide film in which a polyimide precursor whose molecular terminal is end-capped is imidized by heat-curing.

500.39756CX1

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Applicant(s): J. TANAKA, et al
Serial No.: (not yet assigned)
Filed: November 26, 2001
For: COLOR LIQUID CRYSTAL PANEL AND COLOR LIQUID
CRYSTAL DISPLAY APPARATUS
Group: 2871
Examiner:

PROPOSED AMENDMENT TO THE DRAWINGS

Commissioner for Patents
Washington, D.C. 20231

November 26, 2001

Sir:

It is proposed that the drawings in the above-identified application be amended in accordance with the attached red-lined print, and approval of these drawing corrections is respectfully requested at this time.

Upon receipt of the approval of the amendment to the drawings and receipt of the official Notice of Allowance, the drawing amendments will be effected in accordance with the new procedures set forth in 1017 OG 4.

Respectfully submitted,



Melvin Kraus
Registration No. 22,466
ANTONELLI, TERRY, STOUT & KRAUS, LLP

MK/cee
Attachment(s)
(703) 312-6600